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ABSTRACT

This health curriculum guide, intended for use with grades seven through nine, places considerable emphasis on the understanding that current knowledge of disease prevention has an impact on the incidence of prevalence of communicable diseases. The contents of the guide are presented in outline form and cover historical development of man's knowledge of disease, ecological relationships, communicable disease, resurgence of venereal disease, and degenerative disease. For each content area and its sub-divisions fundamental concepts and understandings, teaching aids, and learning activities are suggested. The guide also supplies supplementary information which a teacher could incorporate into the lessons at a simplified level. Outcomes of this unit in physical health are given in terms of the student's (1) awareness of the effects of communicable diseases on human life; (2) appreciation of the progress of man's efforts to control communicable disease; (3) familiarity with conditions under which communicable diseases may be transmitted; (4) knowledge of various methods of protection from communicable diseases; (5) application of desirable personal health practices; (6) understanding of ecological factors related to disease prevalence; and (7) familiarity with the epidemiological method in the prevention and control of disease. Multimedia resources--including books, pamphlets, and films--are included. (SES)

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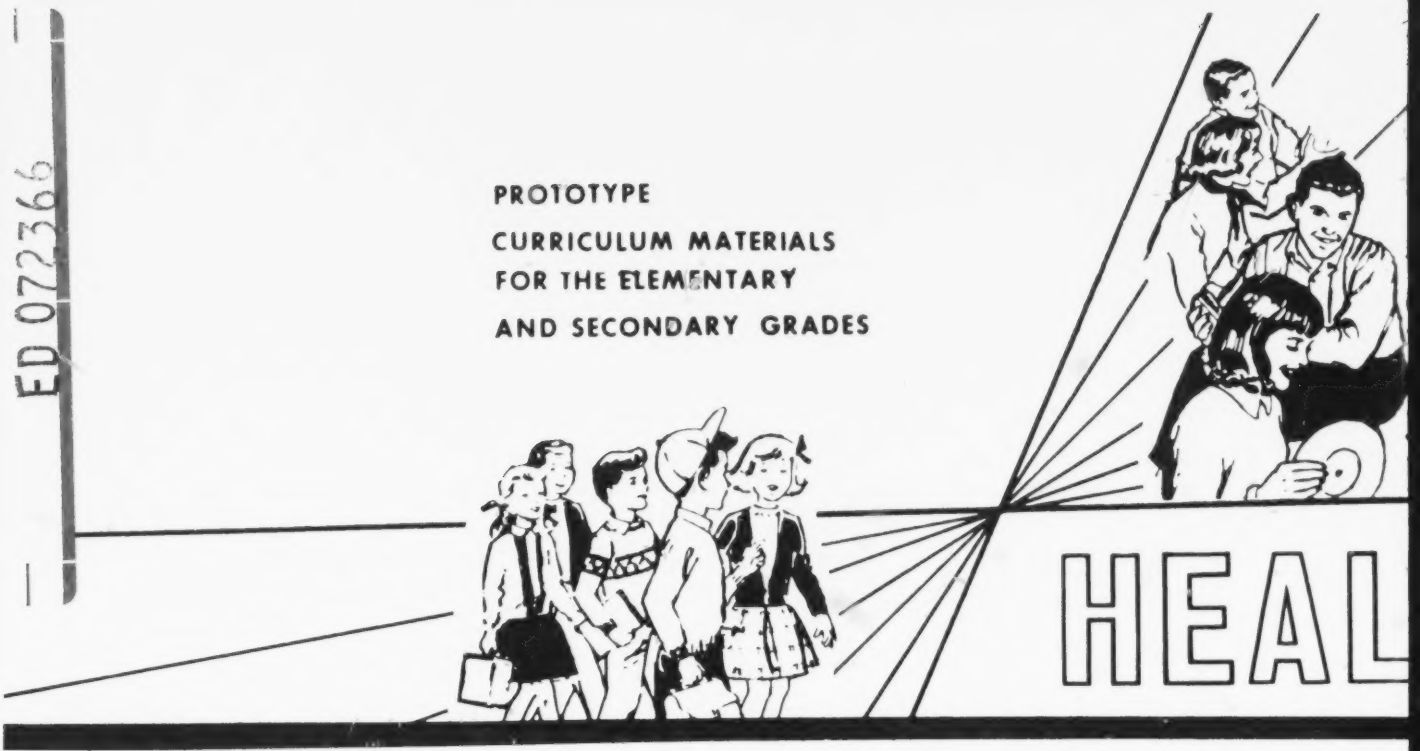

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Disease Prevention and C
Grades 7, 8, and 9

Special edition for
evaluation and discussion

THE UNIVERSITY OF THE STATE OF NEW YORK/THE STATE EDUCATION DEPARTMENT
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HEALTH CURRICULUM MATERIALS
Grades 7, 8, 9

STRAND I - PHYSICAL HEALTH
DISEASE PREVENTION AND CONTROL

The University of the State of New York/The State Education Department
Bureau of Secondary Curriculum Development/Albany 12224
1970

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FOREWORD

This publication contains curriculum suggestions for teaching Strand I - Physical Health, Disease Prevention and Control, for grades 7, 8, and 9.

The publication format of four columns is intended to provide teachers with a basic content outline in the first column; a listing of the major understandings and fundamental concepts which children may achieve, in the second column; and information specifically designed for classroom teaching which should provide them with resource materials, teaching aids, and supplementary information, in the third and fourth columns. The comprehensive nature of the health program makes it imperative that teachers gain familiarity with all of the strands presently in print. In this way, important teaching-learning experiences may be developed by cross referring from one strand to another.

It is recommended that the health coordinator in each school system review these materials carefully and consult with teachers, administrators, and leaders of interested parent groups in order to determine the most appropriate manner in which to utilize this strand as an integral part of a locally adapted, broad and comprehensive program in health education.

The curriculum materials presented here are in tentative form and are subject to modification in content and sequence. Critiques of the format, content, and sequence are welcomed.

Gordon E. Van Hooft
Chief, Bureau of Secondary Curriculum Development

William E. Young
Director, Curriculum Development Center

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DISEASE PREVENTION AND CONTROL

Grades 7, 8, 9

Overview

These curriculum materials on disease prevention and control for grades 7-9 should reinforce the concepts and positive behaviors developed in the elementary grades.

Information concerning the historical events and the personalities that have provided direction to current attempts to understand and control diseases is included.

Considerable emphasis should be placed on the understanding that current knowledge of disease prevention has an impact upon the incidence and prevalence of communicable diseases. It is also important that students be made aware of the extent to which changing communicable disease rates are related to the emergence of newer health problems such as chronic and degenerative diseases.

Pupil Objectives

Pupils in grades 7-9 should:

- be aware of the direct and indirect effects of communicable diseases on human life
- understand and appreciate the progress made in man's efforts to control communicable disease
- be familiar with the conditions under which communicable diseases may be transmitted
- have a knowledge of various methods used to protect us from communicable diseases
- work toward the prevention of communicable disease through the application of desirable personal health practices
- understand and appreciate the ecological factors related to disease prevalence
- become familiar with the epidemiological method in the prevention and control of disease

OUTLINE OF CONTENT	MAJOR UNDERSTANDINGS AND FUNDAMENTAL CONCEPTS	SUGGESTED TEACHING AIDS AND LEARNING ACTIVITIES	S
I. Historical Development of Man's Knowledge of Disease	Technological advances have influenced how man deals with the emerging health problems. Discoveries of the nature of diseases and how to control or prevent them have provided man with a greater opportunity to lead a more efficient and effective life.	Have students investigate: 1. medical and other discoveries related to disease. 2. the incidence and nature of diseases in the nation. Develop a table to show the incidences of various diseases in the past 100 years and relate changes to technical advances.	Co ca or wh on Th us di by in me ha bu
A. Discovery of microbes	The microscope made possible the observation of bacteria and other microorganisms.	Film: "Man Against Microbes," Metropolitan Life Insurance Company. Discuss the importance of the people who have contributed to our understanding of disease.	Th th sm th sc Th to in cl
B. Understanding the nature of disease	The potential for disease increases when man is unable to adapt to environmental conditions or is unable to change them.	Have students make a list of "communicable" diseases which are <u>not</u> necessarily "contagious." 1. How does this kind of knowledge affect disease control measures? (Discuss the ecology of disease.) 2. How do the health sciences use the ecological principles in	Ori th sp on wa ge by ga de to wh

AJOR UNDERSTANDINGS AND FUNDAMENTAL CONCEPTS	SUGGESTED TEACHING AIDS AND LEARNING ACTIVITIES	SUPPLEMENTARY INFORMATION FOR TEACHERS
hnological advances have luenced how man deals h the emerging health blems. coveries of the nature diseases and how to trol or prevent them e provided man with a ater opportunity to lead ore efficient and effec- e life.	Have students investigate: 1. medical and other discoveries related to disease. 2. the incidence and nature of diseases in the nation. Develop a table to show the incidences of various diseases in the past 100 years and relate changes to technical advances.	Communicable diseases are caused by a specific organism or its toxic products, and which can be transmitted from one person to another. The term "contagious" is usually used to describe those diseases which are communicable by direct contact with the infected person; for example, measles. Malaria, on the other hand, would be communicable but not contagious.
microscope made possible observation of bacteria other microorganisms.	Film: "Man Against Microbes," Metropolitan Life Insurance Company. Discuss the importance of the people who have contributed to our understanding of disease.	The word microbe comes from the Greek micros, meaning small, and bios, meaning life; they are living forms of microscopic or submicroscopic size. The first important attempt to classify bacteria was made in 1836 by Ehrenberg, and his classifications are used today.
potential for disease reases when man is unto adapt to environtal conditions or is ble to change them.	Have students make a list of "communicable" diseases which are not necessarily "contagious." 1. How does this kind of knowledge affect disease control measures? (Discuss the ecology of disease.) 2. How do the health sciences use the ecological principles in	Originally it was believed that bacteria generated spontaneously from the material on which they were found. This was the theory of spontaneous generation. It was disproved by Pasteur and others. This gave new impetus to the development of other approaches to the control of disease with whole new sciences evolving;

OUTLINE OF CONTENT	MAJOR UNDERSTANDINGS AND FUNDAMENTAL CONCEPTS	SUGGESTED TEACHING AIDS AND LEARNING ACTIVITIES	SUPPLEMENTARY INFORMATION FOR TEACHERS
	There are measures available which help man to control or prevent disease.	disease prevention? Disease control?	for example, immunology and bacteriology.
	Some diseases are caused by microorganisms such as: . bacteria . viruses . rickettsia . fungi . protozoa	Students should investigate the important discoveries which have contributed to improving our health status.	See Strand I "Disease Prevention and Control" for Grades 4, 5, 6.
		Have students identify causes of both communicable and non-communicable diseases.	For Reference: *Natural History of Infectious Diseases* by F. Burnet MacFarlane.
		References and Aids: *Microbe Hunters*, Paul DeKruif, Harcourt Brace and World, 1956. *The Wonderful World of Medicine*, Hitchie Calder, Garden City Books, 1958. *The Story Behind Great Medical Discoveries*, Elizabeth R. Montgomery, Dodd, Mead & Company, 1945. *Health Heroes*, Metropolitan Life Insurance Company. (Series of Booklets.) Filmstrip: "Jenner's Smallpox Vaccine," International Film Bureau. *Men of Medicine*, Katherine B. Skipper, Viking Press, New York.	*Great Adventures in Medicine* by Samuel Rapport and Helen Wright. A major reason for the rapid decline in disease mortality rates has been the control of communicable diseases which were the major cause of death in 1900. The *prevalence* of some communicable diseases, as well as *mortality rates* from these diseases, have decreased markedly since 1900. The reduction in deaths due to childhood diseases has been significant in increasing life expectancy. The development of wonder drugs and improved medical care are also important factors.

OUTLINE OF CONTENT	MAJOR UNDERSTANDINGS AND FUNDAMENTAL CONCEPTS	SUGGESTED TEACHING AIDS AND LEARNING ACTIVITIES	SUPPLEMEN FOR
		Pamphlet: "Health Through the Ages," Metropolitan Life Insurance Company. Film: "The Fight Against Microbes," International Film Bureau. Film: "Unmasking the Germ Assassins," International Film Bureau.	
II. Ecological Relationships	Ecology is the study of the interactions of organisms and their environment.	Study the prevalence of certain diseases in various social and physical settings, e.g., slum or ghetto areas.	There are d organisms (of this gui the structu of the body many of the related to physical co overcrowdin considered measures.
A. The interrelationships among life forms and the environment	There is a significant relationship among the physical nature of the environment, disease in man, and man's well-being.	Compare the prevalence of communicable disease with noncommunicable diseases today. This comparison may be made in relation to time periods, as well as geographic settings.	The extent disease are and individu to the dise of the caus environment
1. Spread of disease	The spread of disease is influenced by both the social conditions and the physical nature of the environment.		Irresponsib (for example observe pre tining infe can be rela and prevale

?R UNDERSTANDINGS AND NDAMENTAL CONCEPTS	SUGGESTED TEACHING AIDS AND LEARNING ACTIVITIES	SUPPLEMENTARY INFORMATION FOR TEACHERS
	Pamphlet: "Health Through the Ages," Metropolitan Life Insurance Company. Film: "The Fight Against Microbes," International Film Bureau. Film: "Unmasking the Germ Assassins," International Film Bureau.	
gy is the study of the actions of organisms heir environment.	Study the prevalence of certain diseases in various social and physical settings, e.g., slum or ghetto areas.	There are disease-producing organisms (See Section I - B of this guide) which affect the structure and function of the body. The spread of many of these diseases is related to the social and physical conditions, such as overcrowding, which must be considered in any prevention measures.
is a significant relahip among the physical e of the environment, se in man, and man's being.	Compare the prevalence of communicable disease with noncommunicable diseases today. This comparison may be made in relation to time periods, as well as geographic settings.	The extent and severity of a disease are dependent upon group and individual resistance to to the disease, the virulence of the causative agent, and the environmental conditions present.
spread of disease is uenced by both the al conditions and the cal nature of the ronment.		Irresponsible social behavior (for example, neglecting to observe precautions by quarantining infected individuals) can be related to the spread and prevalence of disease.

OUTLINE OF CONTENT	MAJOR UNDERSTANDINGS AND FUNDAMENTAL CONCEPTS	SUGGESTED TEACHING AIDS AND LEARNING ACTIVITIES	SUPPLEME FO
2. Causation	Certain environmental factors are the causative agents of disease and disabilities.	Have students make a list of the factors which may cause disease or which may contribute to causation. 1. How may a person protect himself and others from disease? 2. What are the personal, social, and economic consequences of disease? 3. How is the "chain of infection" broken? Controlled? Film: "Improving America's Health," Coronet Films. Filmstrip: "The International War Against Diphtheria."	Since 1900 methods of better tre substantia threat of Pamphlet: Statistics Department
	Excessive exposure to the disease-producing factors in the environment should be avoided.	Discuss the relationship of each of the following to the ecology of disease. 1. Nutrition 2. Ghetto living 3. Pollution of air, water, and food	Not all mi disease. and many m to man (ei indirectly
3. Controlling communicable diseases	The spread of a communicable disease can be modified by breaking the "chain of infection."	Have students relate the discoveries mentioned earlier to the actual control and prevention of disease. For example, ask some of the following questions: 1. How is the science of bacteriology, or	See Strand information

NDINGS AND CONCEPTS	SUGGESTED TEACHING AIDS AND LEARNING ACTIVITIES	SUPPLEMENTARY INFORMATION FOR TEACHERS
mental causative se and	Have students make a list of the factors which may cause disease or which may contribute to causation. 1. How may a person protect himself and others from disease? 2. What are the personal, social, and economic consequences of disease? 3. How is the "chain of infection" broken? Controlled? Film: "Improving America's Health," Coronet Films. Filmstrip: "The International War Against Diphtheria."	Since 1900 the development of methods of immunization and better treatment methods have substantially reduced the threat of communicable diseases. Pamphlet: "Basic Vital Statistics," New York State Department of Health.
ure to the ng factors ent should	Discuss the relationship of each of the following to the ecology of disease. 1. Nutrition 2. Ghetto living 3. Pollution of air, water, and food	Not all microorganisms cause disease. Many are innocuous, and many more are beneficial to man (either directly or indirectly).
communi- an be aking the tion."	Have students relate the discoveries mentioned earlier to the actual control and prevention of disease. For example, ask some of the following questions: 1. How is the science of bacteriology, or	See Strand IV for additional information regarding the

OUTLINE OF CONTENT	MAJOR UNDERSTANDINGS AND FUNDAMENTAL CONCEPTS	SUGGESTED TEACHING AIDS AND LEARNING ACTIVITIES
		virology, used to limit specific diseases, such as V.D.? 2. In what ways has bacteriology changed in recent years in order to have greater applicability to the study of the epidemiology of disease? 3. What have the major contributions of immunology to the prevention of disease been in the past 50 years? Invite a member of the Health Department, an epidemiologist, for instance, to discuss these questions.
B. Equilibrium between man and microorganisms	A disturbance in the equilibrium between man and specific microorganisms is directly related to the incidence of some diseases.	Have students name and describe the various methods by which disease can be prevented, controlled, and treated. What are some examples of the effects of disease on the individual, family, communities, and nations?

FOR UNDERSTANDINGS AND FUNDAMENTAL CONCEPTS	SUGGESTED TEACHING AIDS AND LEARNING ACTIVITIES	SUPPLEMENTARY INFORMATION FOR TEACHERS
	virology, used to limit specific diseases, such as V.D.? 2. In what ways has bacteriology changed in recent years in order to have greater applicability to the study of the epidemiology of disease? 3. What have the major contributions of immunology to the prevention of disease been in the past 50 years?	social and other environmental factors related to disease, and for the public health measures taken to prevent, control, and further the understanding of diseases. Although bacteriology is concerned with the nature of all microorganisms, scientists have intensified research in areas directed at learning more about specific microorganisms and their control. Immunology is based upon the understanding of the nature of microorganisms. There is, and must be, a close relationship among all of the health sciences.
	Invite a member of the Health Department, an epidemiologist, for instance, to discuss these questions.	
isturbance in the equirium between man and cific microorganisms directly related to the idence of some dises.	Have students name and describe the various methods by which disease can be prevented, controlled, and treated.	See Strand IV, "Public Health" and "World Health" Grades 7, 8, & 9 and Grades 10, 11 & 12.
	What are some examples of the effects of disease on the individual, family, communities, and nations?	It is important to understand that the communicable diseases are encountered mainly through social interactions.

OUTLINE OF CONTENT	MAJOR UNDERSTANDINGS AND FUNDAMENTAL CONCEPTS	SUGGESTED TEACHING AIDS AND LEARNING ACTIVITIES
		What is the effect of disease on individual productiveness and, in the long run, on the economy of the nation?
		See Strand IV, "World Health."
C. Epidemiology	Levels of immunization are dependent upon personal knowledge and recognition of the social importance of taking this preventive measure.	Have students investigate each of the following and their relation to the epidemiological nature of disease. 1. Artificial immunity 2. Sanitary engineering 3. Discovery of bacteria--relation to disease 4. Development of certain chemicals related to disease treatment (Penicillin, for example) 5. The development of: a. Epidemiology b. Ecology c. Immunology d. Bacteriology
1. Definition	Epidemiology is the science which deals with all factors related to disease and health. It may include such things as the (1) incidence, cause, and effect of disease (2) trends and behavior of disease (3) its prevention and control	If the class has had experience in small group discussions or group dynamics, each of the above topics may be used for this kind of learning experience.

NDERSTANDINGS AND MENTAL CONCEPTS	SUGGESTED TEACHING AIDS AND LEARNING ACTIVITIES	SUPPLEMENTARY INFORMATION FOR TEACHERS
	What is the effect of disease on individual productiveness and, in the long run, on the economy of the nation?	
	See Strand IV, "World Health."	
f immunization are upon personal and recognition cial importance this preventive	Have students investigate each of the following and their relation to the epidemiological nature of disease. 1. Artificial immunity 2. Sanitary engineering 3. Discovery of bacteria--relation to disease 4. Development of certain chemicals related to disease treatment (Penicillin, for example) 5. The development of: a. Epidemiology b. Ecology c. Immunology d. Bacteriology	Past discoveries in health and health-related sciences have paved the way for advances in bacteriology, virology, immunology, and branches of the biological sciences. These advances, in turn, have made possible an understanding of ecology and the development of epidemiological methods for combating disease.
ogy is the hich deals with rs related to nd health. It may uch things as the ence, cause, and t of disease s and behavior sease revention and ol	If the class has had experience in small group discussions or group dynamics, each of the above topics may be used for this kind of learning experience.	The teacher should have available a wide variety of reading materials so that pupils may do individualized research into the nature of epidemiology. Examples of classic studies should be included.

OUTLINE OF CONTENT	MAJOR UNDERSTANDINGS AND FUNDAMENTAL CONCEPTS	SUGGESTED TEACHING AIDS AND LEARNING ACTIVITIES	SUPPLEMENTARY INFORMATION FOR TEACHERS
			Some resources are: R.J. Dubos & others & the editors of Life. *Health and Disease*. New York. Time, Inc. 1965. B. MacMahon & others. *Epidemiologic Methods*. Boston. Little, Brown. 1960. F.B. Rogers. *Epidemiology and Communicable Disease Control*. New York. Grune & Stratton. 1963. I. Taylor & J. Knowelden. *Principles of Epidemiology*. 2nd ed. Boston. Little, Brown. 1964.
2. Nature of epidemiology	There is a complex interrelationship among microorganisms, man's resistance to disease, social conditions, and the physical environment.	Have a group of students develop bar graphs that show the mortality rates from polio, measles, scarlet fever, and rheumatic fever over a period of several years. Have another group report on the dates that preventive measures were first made available for each of these diseases. Are these developments reflected in the graph?	
		What are examples of social conditions? Physical conditions?	Deaths from such diseases as typhoid fever, diphtheria, and scarlet fever have been decreased to nearly zero in the United States.
		Compare social and physical conditions throughout the world with relation to the incidence and kinds of disease in various countries.	

OUTLINE OF CONTENT	MAJOR UNDERSTANDINGS AND FUNDAMENTAL CONCEPTS	SUGGESTED TEACHING AIDS AND LEARNING ACTIVITIES	SU
III. Communicable Disease	Disease is any condition of the body which interferes with the proper functioning of the individual. It may be either of a communicable or non-communicable nature.	Film: "Microorganisms That Cause Disease."	
A. Modes of transmission	Communicable diseases are transmitted by contact with infectious discharges from another person. External objects used by infected persons act only incidentally as bearers of pathogenic organisms, as when freshly contaminated with germ-laden excretions. Some diseases are spread through direct and indirect contact between a well person and an infected human or animal.	Have students make a list of ways disease germs may be transmitted. Film: "Trial of Infection," A-V Film Library, Department M-497, Eli Lily & Company, Indianapolis, Indiana 46206.	Most well bodi anim can peri Sali nose that meas tube Many able milk undu ameb dise cont
1. Direct contact	Food, water, and soil may serve as vehicles for disease transmission if they are contaminated through the excretion of human wastes. More disease-producing microorganisms enter and leave the body by way of the nose and throat than by any other channel.		See tion 5, &
			Cont vene erys nucl

DERSTANDINGS AND ENTAL CONCEPTS	SUGGESTED TEACHING AIDS AND LEARNING ACTIVITIES	SUPPLEMENTARY INFORMATION FOR TEACHERS
s any condition dy which inter- h the proper ng of the indi- It may be either unicable or non- ble nature.	Film: "Microorganisms That Cause Disease."	
ble diseases are ed by contact ctious discharges her person.	Have students make a list of ways disease germs may be transmitted.	Most disease organisms are so well adapted to life in the bodies of living men or animals, or plants that they can exist for only brief periods on any external object.
objects used by persons act only lly as bearers of c organisms, as nly contaminated -laden excretions.	Film: "Trial of Infection," A-V Film Library, Department M-497, Eli Lily & Company, Indianapolis, Indiana 46206.	Saliva and discharges from the nose and throat can carry germs that cause such diseases as measles, mumps, polio, and tuberculosis.
ases are spread irect and indirect etween a well d an infected animal.		Many varieties of bacteria are able to live and multiply in milk and other foods. TB, undulant fever, typhoid, amebic dysentery and other diseases may be spread via contaminated foods.
er, and soil may vehicles for ransmission if contaminated he excretion of tes.		See Strand I, "Disease Prevention and Control" Grades 4, 5, & 6.
ase-producing nisms enter and body by way of nd throat than er channel.		Contact diseases include the venereal diseases, trachoma, erysipelas, infectious mononucleosis, and others.

OUTLINE OF CONTENT	MAJOR UNDERSTANDINGS AND FUNDAMENTAL CONCEPTS	SUGGESTED TEACHING AIDS AND LEARNING ACTIVITIES	SUPPLEMEN FOR
2. Indirect contact	The practice of desirable health behavior by the individual is vital to the prevention of communicable disease.	Have students present a report to the class on the housefly as a carrier of disease, identifying at least three diseases it can carry.	Malaria is female Anop Yellow feve the Aedes m sickness is flies. The insects harmed by t carry, desp in many ins organisms m go complica part of the development of their in
3. Congenital infections	Congenital infections are transmitted from the mother to the baby before birth, so that the baby is born with the disease.	Have class discuss the ways congenital diseases can be prevented.	Congenital inherited. condition i transmitted child by ge Syphilis is infection w spreads fro mother thro and infects
B. Body defenses	Our bodies have "lines of defense" which help protect us against disease.	Film: "Infectious Diseases and Natural Body Defenses," Coronet Films.	Body openin a special m mucous secr and other f that may en

UNDERSTANDINGS AND AMENTAL CONCEPTS	SUGGESTED TEACHING AIDS AND LEARNING ACTIVITIES	SUPPLEMENTARY INFORMATION FOR TEACHERS
ctice of desirable behavior by the ual is vital to vention of cable disease.	Have students present a report to the class on the housefly as a carrier of disease, identifying at least three diseases it can carry.	Malaria is carried only by the female Anopheles mosquito. Yellow fever is transmitted by the Aedes mosquito. Sleeping sickness is spready by tsetse flies. The insects are not usually harmed by the germs they carry, despite the fact that in many instances these organisms multiply and undergo complicated changes as part of their life cycle of development within the bodies of their insect hosts.
tal infections are tted from the mother baby before birth, the baby is born e disease.	Have class discuss the ways congenital diseases can be prevented.	Congenital infections are <u>not</u> inherited. An inherited condition is one that is transmitted from parent to child by genetic material. Syphilis is a congenital infection when the organism spreads from an infected mother through the placenta, and infects the unborn child.
ies have "lines of " which help pro- against disease.	Film: "Infectious Diseases and Natural Body Defenses," Coronet Films.	Body openings are lined with a special membrane whose mucous secretion traps organisms and other foreign particles that may enter the opening.

OUTLINE OF CONTENT	MAJOR UNDERSTANDINGS AND FUNDAMENTAL CONCEPTS	SUGGESTED TEACHING AIDS AND LEARNING ACTIVITIES	SUPPLEMENTARY INFORMATION FOR TEACHERS
1. Skin	Our first line of defense against disease germs consists of the skin and mucous membranes. The outer skin is a tough layer which, if not broken, forms an effective defense against disease germs.	Pamphlet: "Control of Communicable Diseases In Man," American Public Health Association.	The mucous membranes lining the nasal passages and trachea are covered with cilia which trap foreign particles and sweep them toward the throat. These particles irritate the membranes and cause coughing; thus the particles are expelled from the body. The resistance of the skin and the mucous membranes is successful only so long as they keep infectious agents outside of the body tissue. They are important defenses, and resistance to infectious disease in general is increased by cleanliness and good nutrition, which help keep these body surfaces in the best state of health. Secretions such as perspiration, tears, nasal secretions, saliva, and gastric juices are slightly antiseptic.
2. Blood cells	A second line of defense is provided by the leukocytes, or white blood cells.	Describe a typical infection reaction, from its cause, the action of the leukocytes, pus formation (and its purpose), to tissue regeneration.	White blood cells have the power of independent motion, and are able to pass out of the capillaries to a point in the tissues where they are attracted by such foreign material as a group of microbes

OUTLINE OF CONTENT	MAJOR UNDERSTANDINGS AND FUNDAMENTAL CONCEPTS	SUGGESTED TEACHING AIDS AND LEARNING ACTIVITIES	SUPPLEMENT FOR
	The presence of micro-organisms in the body stimulates the production of white blood cells which engulf and destroy the microorganisms. Unlike red blood cells which must remain within a closed circulatory system, the white cells are able to pass through the capillary walls and move about through the tissues. Disease symptoms develop only when there are too many organisms for the body to destroy quickly; when the organisms are so vigorous that they overcome the body's usual defenses; or when these defenses become weakened.		Once in cont the leukocyt them into th just as an a and engulfs food. The e may be destr leukocyte or carried away of the cell A normal whi is 5,000 - 9 blood. This 100,000-500, cells in eac
3. Formation of antibodies or antitoxins	As a third line of defense, the body manufactures specific antibodies or antitoxins for different diseases.		
4. Factors influencing resistance to disease	Resistance to diseases in general is influenced by physiological well-being, inherited factors, and emotional states.		

R UNDERSTANDINGS AND NDAMENTAL CONCEPTS	SUGGESTED TEACHING AIDS AND LEARNING ACTIVITIES	SUPPLEMENTARY INFORMATION FOR TEACHERS
resence of micro- sms in the body lates the production te blood cells which and destroy the rganisms. red blood cells which remain within a closed latory system, the cells are able to through the capillary and move about through issues. e symptoms develop hen there are too many sms for the body to y quickly; when the sms are so vigorous hey overcome the usual defenses; or hese defenses become ed. hird line of defense, dy manufactures ic antibodies or xins for different es. ance to diseases in l is influenced by logical well-being, ted factors, and nal states.		Once in contact with the germs, the leukocytes take many of them into their own substance, just as an amoeba surrounds and engulfs a particle of food. The engulfed bacteria may be destroyed within the leukocyte or they may be carried away in the destruction of the cell itself. A normal white blood count is 5,000 - 9,000/cu.mm.(ml.) of blood. This means approximately 100,000-500,000 white blood cells in each drop of blood.

OUTLINE OF CONTENT	MAJOR UNDERSTANDINGS AND FUNDAMENTAL CONCEPTS	SUGGESTED TEACHING AIDS AND LEARNING ACTIVITIES	SUPPL
C. Immunity	Immunization is an important protective measure against certain diseases.	Have the class investigate the nature of immunity.	Absolut against the spe tible.
1. Definition	Immunity is the ability of an individual to resist a specific disease. Immunization prevents and controls some diseases.	What is the antigen-antibody reaction as it relates to immunity?	term me has a r resista particu Natural some ex inborn racial Acquire results ease or ing its taking
2. Kinds	Immunity may be acquired naturally by having had a disease, or artifically as a result of medically-introduced substances (e.g., vaccines, toxoids.) Passive immunity is produced in an individual by injecting antibodies produced by another individual or animal. Active immunity is the condition wherein the body produces its own antibodies as a reaction to an antigen.	Name several diseases in which an attack usually confers lasting immunity. List some of the more important diseases which can be controlled by immunization. Compare the diseases which can be controlled by artificial immunity today with those of 50 or 100 years ago.	Immunit natural longer- does pa results antibod other p Infants mothers immunit infecti mothers It is p become after h case (m symptom disease

JOR UNDERSTANDINGS AND FUNDAMENTAL CONCEPTS	SUGGESTED TEACHING AIDS AND LEARNING ACTIVITIES	SUPPLEMENTARY INFORMATION FOR TEACHERS
unization is an impor-t protective measure inst certain diseases.	Have the class investigate the nature of immunity.	Absolute immunity is unknown against any infection to which the species is naturally susceptible. Immunity as we use the term means that an individual has a relatively increased resistance toward some particular pathogenic organism.
unity is the ability of individual to resist a cific disease.	What is the antigen-antibody reaction as it relates to immunity?	
unization prevents and trols some diseases.		Natural immunity depends to some extent on factors that are inborn and related to one's racial and ethnic heritage.
		Acquired immunity is that which results from having had a disease or from the body developing its own antibodies after taking preventive measures.
unity may be acquired urally by having had a ease, or artifically as esult of medically-roduced substances g., vaccines, toxoids.)	Name several diseases in which an attack usually confers lasting immunity.	Immunity that is acquired naturally generally provides longer-lasting protection than does passive immunity that results from the injection of antibodies from the blood of other people or animals.
sive immunity is pro-ed in an individual by ecting antibodies pro-ed by another indi-ual or animal.	List some of the more important diseases which can be controlled by immunization.	Infants receive from their mothers a passive (temporary) immunity against some common infectious diseases their mothers have had.
ive immunity is the dition wherein the body duces its own antibodies a reaction to an antigen.	Compare the diseases which can be controlled by artificial immunity today with those of 50 or 100 years ago.	It is possible for one to become immune to a disease after having had a subclinical case (mild, without noticeable symptoms) of the specific disease.

OUTLINE OF CONTENT	MAJOR UNDERSTANDINGS AND FUNDAMENTAL CONCEPTS	SUGGESTED TEACHING AIDS AND LEARNING ACTIVITIES	SUPPLEM F
IV. Resurgence of Venereal Diseases	Medical science is capable of treating and eradicating venereal diseases, yet these diseases now represent the most serious of the communicable disease problems in the United States. One of the most serious factors relating to the resurgence of venereal diseases is ignorance.	What should you do if you suspect you have a venereal disease? What resources are available in your school and in the community? How would your decision affect you? Others in the community? Show and discuss the film: "Quarter Million Teenagers." Teacher Reference: "Resurgence of Venereal Disease." Report by the Committee on Public Health, The New York Academy of Medicine, March 2, 1964. Pamphlet: "Venereal Disease Is Still a World Problem." AMA, 535 North Dearborn Street, Chicago, Illinois 60610. Pamphlets: New York State Health Department. "Strictly for Teenagers--Some Facts About Venereal Disease." "What You Should Know About Syphilis." "What You Should Know About Gonorrhea." Reference: *Teacher's Handbook of Venereal Disease Education*, ($2.00) and	There has in recent diseases. year has increase the previ between 1 rise in i among tee than 130 The World estimates cases of year arou Salacious movies en attitude

UNDERSTANDINGS AND DAMENTAL CONCEPTS	SUGGESTED TEACHING AIDS AND LEARNING ACTIVITIES	SUPPLEMENTARY INFORMATION FOR TEACHERS
science is capable ting and eradicating l diseases, yet iseases now represent t serious of the cable disease prob- n the United States. the most serious relating to the nce of venereal s is ignorance.	What should you do if you suspect you have a venereal disease? What resources are available in your school and in the community? How would your decision affect you? Others in the community? Show and discuss the film: "Quarter Million Teenagers." Teacher Reference: "Resurgence of Venereal Disease." Report by the Committee on Public Health, The New York Academy of Medicine, March 2, 1964. Pamphlet: "Venereal Disease Is Still a World Problem." AMA, 535 North Dearborn Street, Chicago, Illinois 60610. Pamphlets: New York State Health Department. "Strictly for Teenagers--Some Facts About Venereal Disease." "What You Should Know About Syphilis." "What You Should Know About Gonorrhea." Reference: *Teacher's Handbook of Venereal Disease Education*, ($2.00) and	There has been a steady rise in recent years in venereal diseases. Since 1959, each year has shown a 50 percent increase in incidence over the previous year, and between 1959 and 1960, the rise in infectious syphilis among teenagers has been more than 130 percent. The World Health Organization estimates that 60,000,000 new cases of gonorrhea occur each year around the world. Salacious literature, ads, and movies encourage a distorted attitude toward sex.

OUTLINE OF CONTENT	MAJOR UNDERSTANDINGS AND FUNDAMENTAL CONCEPTS	SUGGESTED TEACHING AIDS AND LEARNING ACTIVITIES	SUPPLE
		Student's Manual on Venereal Disease -- Facts About Syphilis and Gonorrhea. ($1.00), by William F. Schwarz, HPER, NEA, 1201 Sixteenth Street, N.W., Washington, D.C. 20036.	
V. Degenerative Disease	Some diseases are the result of body dysfunction.	See Strand IV, World Health	The dege processe hereditar factors, and inju contribut ing of a
A. General nature	These diseases cannot be transmitted to others, are called degenerative or constitutional, and are becoming our most serious health problem.	Have students determine the extent of some of the degenerative diseases in New York State. 1. Which ones are most fatal? 2. Are there degenerative diseases of adolescence or do they occur just in old age? 3. What kinds of control measures are used?	The physi diseases or may no Such dise called ch slight to
B. Control	The control of degenerative diseases requires the action of individuals, families, and community effort.	Invite a representative of the Heart Association, Cancer Society, or TB-RD Association, or other agency seeking to control a degenerative disease, to discuss the research and progress in his area of concern. Secure materials from the above associations for student reading. Have the class discuss the role of the individual or public health agencies in the control of chronic disease.	The major would inc circulato (of all k rheumatic arthritis Many agen establish into the diseases.
			See Stran and Publi

MAJOR UNDERSTANDINGS AND FUNDAMENTAL CONCEPTS	SUGGESTED TEACHING AIDS AND LEARNING ACTIVITIES	SUPPLEMENTARY INFORMATION FOR TEACHERS
	Student's Manual on Venereal Disease -- Facts About Syphilis and Gonorrhea. ($1.00), by William F. Schwarz, HPER, NEA, 1201 Sixteenth Street, N.W., Washington, D.C. 20036.	
ne diseases are the sult of body dysfunction.	See Strand IV, World Health	The degenerative disease processes may be due to hereditary factors, nutritional factors, the aging process, and injury, all of which can contribute to the dysfunctioning of an organ or system.
se diseases cannot be nsmitted to others, are led degenerative or stitutional, and are oming our most serious lth problem.	Have students determine the extent of some of the degenerative diseases in New York State. 1. Which ones are most fatal? 2. Are there degenerative diseases of adolescence or do they occur just in old age? 3. What kinds of control measures are used?	The physical effects of these diseases on an individual may or may not be progressive. Such diseases are sometimes called chronic and may have slight to disabling effects.
control of degenerative eases requires the action individuals, families, community effort.	Invite a representative of the Heart Association, Cancer Society, or TB-RD Association, or other agency seeking to control a degenerative disease, to discuss the research and progress in his area of concern. Secure materials from the above associations for student reading.	The major degenerative diseases would include heart and circulatory diseases, cancer (of all kinds), diabetes, rheumatic heart disease, and arthritis. Many agencies have been established to do research into the nature of these diseases.
	Have the class discuss the role of the individual or public health agencies in the control of chronic disease.	See Strand IV, Environmental and Public Health.

DISEASE PREVENTION AND CONTROL
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Multimedia Resources

TEACHER REFERENCES

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